VERSATILE

CLASS TEST

PHYSICS

English Medium

CLASS 10th

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Key to 10th Physics (English Medium)

Test # 1	1(b)	2(b)	3(b)	4(c)	5(a)	6(b)	7(b)	8(b)	9(a)	10(b)	11(c)	12(c)
Test # 2	1(a)	2(c)	3(d)	4(a)	5(d)	6(b)	7(a)	8(b)	9(c)	10(a)	11(d)	12(b)
Test # 3	1(c)	2(d)	3(a)	4(d)	5(a)	6(c)	7(d)	8(a)	9(c)	10(b)	11(c)	12(a)
Test # 4	1(b)	2(c)	3(c)	4(d)	5(d)	6(b)	7(a)	8(a)	9(b)	10(c)	11(d)	12(b)
Test # 5	1(b)	2(a)	3(b)	4(b)	5(c)	6(b)	7(c)	8(c)	9(c)	10(a)	11(d)	12(b)
Test # 6	1(a)	2(c)	3(a)	4(c)	5(d)	6(a)	7(c)	8(c)	9(b)	10(c)	11(b)	12(d)
Test # 7	1(d)	2(a)	3(d)	4(b)	5(b)	6(b)	7(c)	8(b)	9(a)	10(c)	11(a)	12(d)
Test # 8	1(d)	2(d)	3(c)	4(b)	5(c)	6(d)	7(b)	8(b)	9(c)	10(a)	11(b)	12(c)
Test # 9	1(d)	2(d)	3(a)	4(b)	5(a)	6(b)	7(c)	8(b)	9(a)	10(a)	11(c)	12(d)
Test # 10	1(d)	2(c)	3(b)	4(a)	5(a)	6(b)	7(d)	8(c)	9(b)	10(d)	11(a)	12(a)
Test # 11	1(d)	2(b)	3(d)	4(d)	5(b)	6(a)	7(d)	8(a)	9(a)	10(b)	11(a)	12(b)
Test # 12	1(b)	2(a)	3(d)	4(a)	5(a)	6(b)	7(d)	8(d)	9(d)	10(a)	11(c)	12(d)
Test # 13	1(b)	2(d)	3(a)	4(a)	5(d)	6(a)	7(b)	8(a)	9(a)	10(a)	11(c)	12(d)
Test # 14	1(b)	2(d)	3(d)	4(c)	5(a)	6(c)	7(a)	8(a)	9(d)	10(a)	11(b)	12(a)
Test # 15	1(b)	2(d)	3(b)	4(c)	5(d)	6(c)	7(b)	8(c)	9(c)	10(b)	11(b)	12(b)
Test # 16	1(c)	2(c)	3(a)	4(a)	5(a)	6(b)	7(c)	8(a)	9(d)	10(c)	11(d)	12(d)
Test # 17	1(b)	2(a)	3(b)	4(c)	5(a)	6(c)	7(d)	8(c)	9(c)	10(a)	11(a)	12(d)
Test # 18	1(c)	2(b)	3(a)	4(c)	5(c)	6(a)	7(a)	8(b)	9(b)	10(c)	11(b)	12(d)
Test # 19	1(a)	2(a)	3(c)	4(b)	5(a)	6(b)	7(a)	8(b)	9(a)	10(a)	11(b)	12(c)
Test # 20	1(a)	2(c)	3(a)	4(a)	5(b)	6(a)	7(d)	8(b)	9(c)	10(d)	11(a)	12(d)
Test # 21	1(d)	2(a)	3(c)	4(c)	5(a)	6(a)	7(a)	8(a)	9(a)	10(d)	11(d)	12(a)
Test # 22	1(b)	2(a)	3(a)	4(c)	5(c)	6(c)	7(a)	8(b)	9(a)	10(c)	11(b)	12(b)
Test # 23	1(c)	2(b)	3(d)	4(a)	5(a)	6(d)	7(d)	8(d)	9(b)	10(d)	11(d)	12(b)
Test # 24	1(d)	2(a)	3(b)	4(a)	5(b)	6(c)	7(a)	8(d)	9(a)	10(a)	11(b)	12(a)
Test # 25	1(a)	2(b)	3(d)	4(a)	5(a)	6(c)	7(a)	8(d)	9(a)	10(a)	11(a)	12(b)
Test # 26	1(a)	2(d)	3(a)	4(b)	5(c)	6(a)	7(d)	8(c)	9(b)	10(c)	11(b)	12(d)
Test # 27	1(b)	2(c)	3(a)	4(a)	5(c)	6(d)	7(b)	8(d)	9(b)	10(c)	11(a)	12(a)
Test # 28	1(a)	2(a)	3(b)	4(a)	5(c)	6(b)	7(b)	8(d)	9(b)	10(b)	11(b)	12(a)
Test # 29	1(b)	2(a)	3(d)	4(d)	5(b)	6(d)	7(a)	8(b)	9(d)	10(c)	11(a)	12(c)
Test # 30	1(a)	2(a)	3(b)	4(a)	5(a)	6(d)	7(d)	8(c)	9(a)	10(c)	11(a)	12(c)

Test # 1	Chapter # 10	Simple Harmonic Motion & Waves	Time: 30 Min

	A	B	C	D		A	B	C	D		A	B	C	D
1.	○	○	○	○	5.	○	○	○	○	9.	○	○	○	○
2.	○	○	○	○	6.	○	○	○	○	10.	○	○	○	○
3.	○	○	○	○	7.	○	○	○	○	11.	○	○	○	○
4.	○	○	○	○	8.	○	○	○	○	12.	○	○	○	○

1- Fill the box of correct answer in this manner that the ink is not come out from the box. (12)

(i) A large ripple tank with a vibrator working at a frequency of 30 Hz produces 25 complete waves in a distance of 50cm. The velocity of the wave is:

(a) $53cms^{-1}$ (b) $60cms^{-1}$ (c) $750cms^{-1}$ (d) $1500cms^{-1}$

(ii) Which of the following characteristics of a wave is independent of the others:

(a) speed (b) frequency (c) amplitude (d) wavelength

(iii) The relation between v, f and λ of a wave is:

(a) $vf = \lambda$ (b) $f\lambda = v$ (c) $v\lambda = f$ (d) $v = \frac{\lambda}{f}$

(iv) In S.H.M. of simple pendulum restoring force is provided by:

(a) Air resistance (b) Tension in the string
(c) Force of gravity (d) Inertia

(v) Wavelength λ of waves can also be defined as ratio of:

(a) Speed and frequency (b) Time period and frequency
(c) Distance and speed (d) Frequency and speed

(vi) If mass of the bob is decreased by the factor 2, then period of pendulum will be:

(a) Increased by the factor 2 (b) Remains same
(c) Decreased by the factor 2 (d) Decreased by the factor 4

(vii) If the speed of a wave is $340ms^{-1}$ and wavelength is 0.5m, then frequency will be:

(a) 170Hz (b) 340Hz (c) 3400Hz (d) 680Hz

(viii) Categories of waves are:

(a) 1 (b) 2 (c) 3 (d) 4

(ix) Ripple tank is used to study the characteristics of:

(a) Mechanical waves (b) Light waves
(c) Radio waves (d) Electrom-agnetic waves

(x) In simple pendulum motion restoring force is provided by:

(a) Air resistance (b) Tension in the string
(c) Inertia (d) Weight of body

(xi) The example of shock absorber of the vehicles are:

(a) Simple harmonic motion (b) Vibratory motion
(c) Damped motion (d) Linear motion

(xii) Formula for the time period of simple pendulum is:

(a) $T=2\pi\sqrt{\frac{m}{g}}$ (b) $T=2\pi\sqrt{\frac{m}{k}}$ (c) $T=2\pi\sqrt{\frac{L}{g}}$ (d) $T=2\pi\sqrt{\frac{g}{L}}$

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2- Write short answers of the following questions. (18)

(i) Define restoring force.
(ii) State Hook's law.
(iii) If the length of a simple pendulum is doubled, what will be the change in its time period?
(iv) Define wave motion.
(v) Define diffraction of waves.
(vi) Define simple harmonic motion and write its equation.
(vii) Prove that $V = f\lambda$.
(viii) Define Mechanical Waves and write names of its types.
(ix) Define refraction of waves.

Test # 2	Chapter # 10	Simple Harmonic Motion & Waves	Time: 30 Min

1- Fill the box of correct answer in this manner that the ink is not come out from the box. (12)

(i) Wavelength λ of waves can also be defined as ratio of:
(a) Speed and frequency (b) Time period and frequency
(c) Distance and speed (d) Frequency and speed

(ii) The SI unit of amplitude is:
(a) Sec (b) Hz (c) m (d) cm

(iii) Wave transfers from one place to other:
(a) Frequency (b) Velocity (c) Wave length (d) Energy

(iv) If length of a pendulum is one meter on earth, then its time period will be:
(a) 2s (b) 10s (c) 1s (d) 6s

(v) Index of refraction of diamond is:
(a) 1.33 (b) 1.52 (c) 2.21 (d) 2.42

(vi) Formula for the time period of mass attached to spring is:
(a) $T=2\pi\sqrt{\frac{k}{m}}$ (b) $T=2\pi\sqrt{\frac{m}{k}}$ (c) $T=2\pi\sqrt{\frac{l}{m}}$ (d) $T=4\pi\sqrt{\frac{m}{k}}$

(vii) Which of the following is an example of simple harmonic motion?
(a) Motion of a simple pendulum (b) The motion of ceiling fan
(c) The spinning of the Earth on its axis (d) A bouncing ball on a floor

(viii) If the mass of the bob of a pendulum is increased by a factor of 3, the period of the pendulum's motion will.
(a) be increased by a factor of 2 (b) remain the same
(c) be decreased by a factor of 2 (d) be decreased by a factor of 4

(ix) Which of the following devices can be used to produce both a transvers and longitudinal waves?
(a) A string (b) a ripple tank
(c) a helical spring (slinky) (d) a tuning fork

(x) Waves transfer:
(a) energy (b) frequency (c) wavelength (d) velocity

(xi) Which of the following is a method of energy transfer?
(a) conduction (b) radiation (c) wave motion (d) all of these

(xii) In a vaccum all electromagnetic waves have the same:
(a) speed (b) frequency (c) amplitude (d) wavelength

2- Write short answers of the following questions. (18)

(i) Distinguish between longitudinal and transverse waves with a suitable example.
(ii) Define simple pendulum. Write down its time period equation.
(iii) With respect to simple pendulum, what is difference between vibration and amplitude?
(iv) Define time period and frequency.
(v) Define simple harmonic motion. Also write a feature of SHM.
(vi) Define wave equation and write down its formula?
(vii) A ball is dropped from a certain height onto the floor and keeps bouncing. Is the motion of the ball simple harmonic? Explain.
(viii) What is the difference between mechanical waves and electromagnetic waves?
(ix) Define spring constant. Write its formula also.

Test # 3	Chapter # 11	Sound	Time: 30 Min

	A	B	C	D		A	B	C	D		A	B	C	D
1.	○	○	○	○	5.	○	○	○	○	9.	○	○	○	○
2.	○	○	○	○	6.	○	○	○	○	10.	○	○	○	○
3.	○	○	○	○	7.	○	○	○	○	11.	○	○	○	○
4.	○	○	○	○	8.	○	○	○	○	12.	○	○	○	○

1- Fill the box of correct answer in this manner that the ink is not come out from the box. (12)

(i) When the frequency of a sound wave is increased, which of the following will decrease?

i. Wavelength ii. Period iii. Amplitude

(a) i only (b) iii only (c) i and ii only (d) i and iii only

(ii) Intensity level of the sound produced by mosquito buzzing is________:

(a) 70dB (b) 90dB (c) 100dB (d) 40dB

(iii) Sound level in dB is given by:

(a) $10\log\frac{I}{I_o}(dB)$ (b) $\log\frac{I}{I_o}(dB)$ (c) $10\log\frac{I_o}{I}(dB)$ (d) $\log\frac{I_o}{I}(dB)$

(iv) The intensity level of train siren is:

(a) 150 dB (b) 130 dB (c) 100 dB (d) 120 dB

(v) The speed of sound in air is:

(a) $1246kmh^{1}$ (b) $1264kmh^{1}$ (c) $1462kmh^{1}$ (d) $21462kmh^{1}$

(vi) If speed of a sound is $320ms^{-1}$, the distance covered in a time of 1.5s will be:

(a) 331.5m (b) 33.5m (c) 480m (d) 221m

(vii) The speed of sound at 0°C is:

(a) $386ms^{1}$ (b) $376ms^{-1}$ (c) $231ms^{1}$ (d) $331ms^{1}$

(viii) One bell is equal to:

(a) 10dB (b) 20dB (c) 30dB (d) 40dB

(ix) The speed of sound in distilled water at 25°C is:

(a) 7478 (b) 7488 (c) 1498 (d) 1508

(x) In which state of matter longitudinal waves move faster?

(a) Liquid (b) Solid (c) Gas (d) Liquid and Solid both

(xi) The speed of sound in wood at 25°C in meters per second is:

(a) 972 (b) 1290 (c) 2000 (d) 3980

(xii) The intensity level of rusting of leaves is:

(a) 10 dB (b) 20 dB (c) 30 dB (d) 40 dB

2- Write short answers of the following questions. (18)

(i) What is difference between musical sound and noise?

(ii) Define pitch and quality.

(iii) Describe the factors on which a safe level of noise depends.

(iv) Sound requires material medium for its propagation. Explain.

(v) Define intensity of sound. Also write its SI unit.

(vi) How the depth of sea can be measured by ultrasonic?

(vii) Is there any difference between echo and reflection of sound? Explain.

(viii) What effect has the amplitude of a vibrating body upon loudness?

(ix) On what factors does the loudness depend?

Test # 4	Chapter # 11	Sound	Time: 30 Min

	A	B	C	D
1.	○	○	○	○
2.	○	○	○	○
3.	○	○	○	○
4.	○	○	○	○
5.	○	○	○	○
6.	○	○	○	○
7.	○	○	○	○
8.	○	○	○	○
9.	○	○	○	○
10.	○	○	○	○
11.	○	○	○	○
12.	○	○	○	○

1- Fill the box of correct answer in this manner that the ink is not come out from the box. (12)

(i) The sound level of whisper is:
(a) 10 dB (b) 30 dB (c) 40 dB (d) 70 dB

(ii) The unit of intensity of sound is:
(a) Wm^{1} (b) Wm (c) Wm^{2} (d) $W^{1}m$

(iii) Vibrating bodies produce:
(a) Transvers waves (b) Electromagnetic waves
(c) Compressional waves (d) Radio waves

(iv) The level of noise recommended in most countries over an eight hour work day is usually.
(a) 82-90 dB (b) 83-90 dB (c) 84-90 dB (d) 85-90 dB

(v) Example of mechanical waves is:
(a) Radio waves (b) X-Rays (c) Light waves (d) Sound waves

(vi) The characteristic of sound by which we can distinguish between two sounds of same loudness and pitch is called:
(a) Intensity (b) Quality (c) Loudness (d) Pitch

(vii) Which is an example of a longitudinal wave?
(a) sound wave (b) light wave (c) radio wave (d) water wave

(viii) How does sound travel from its source to your ear?
(a) by charges in air pressure (b) by vibrations in wires or strings
(c) by electromagnetic wave (d) by infrared waves

(ix) Which form of energy is sound?
(a) electrical (b) mechanical (c) thermal (d) chemical

(x) Astronauts in space need to communicate with each other by radio links because:
(a) sound waves travel very slowly in space (b) sound waves travel very fast in space
(c) sound waves cannot travel in space (d) sound waves have low frequency in space

(xi) The loudness of a sound is most closely related to its:
(a) frequency (b) period (c) wavelength (d) amplitude

(xii) For a normal person, audible frequency range for sound wave lie between:
(a) 10 Hz and 10 kHz (b) 20 Hz and 20 kHz
(c) 25 Hz and 25 kHz (d) 30 Hz and 30 kHz

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2- Write short answers of the following questions. (18)

(i) Why must the volume of a stereo in a room with wall-to-wall carpet be tuned higher than in a room with a wooden floor? Pattern
(ii) Define audible sound. Also describe its frequency range.
(iii) If at Anarkali Bazar, the sound level is 80 dB, what will be the intensity level of sound there?
(iv) What is difference between loudness and intensity of sound?
(v) State two uses of ultrasound.
(vi) Explain the quality of sound.
(vii) In which, sound moves faster in solid or liquid? Why?
(viii) On what does frequency of tunning fork depends?
(ix) Calculate the frequency of sound wave of speed 340 m/s and wavelength 0.5m.

Test # 5	Chapter # 12	Geometrical Optics	Time: 30 Min

	A	B	C	D		A	B	C	D		A	B	C	D
1.	○	○	○	○	5.	○	○	○	○	9.	○	○	○	○
2.	○	○	○	○	6.	○	○	○	○	10.	○	○	○	○
3.	○	○	○	○	7.	○	○	○	○	11.	○	○	○	○
4.	○	○	○	○	8.	○	○	○	○	12.	○	○	○	○

1- Fill the box of correct answer in this manner that the ink is not come out from the box. (12)

(i) Which type of image is produced by the converging lens of human eye if it views a distant object?
(a) real, erect, same size (b) real, inverted, diminished
(c) virtual, erect, diminished (d) virtual, inverted, magnified

(ii) Image formed on a camera is:
(a) real, inverted, and diminished (b) virtual, upright and diminished
(c) virtual, upright and magnified (d) real, inverted and magnified

(iii) If a ray of light in glass is incident on an air surface at an angle greater than the critical angle, the ray will:
(a) refract only (b) reflect only
(c) partially refract and partially reflect (d) diffract only

(iv) The critical angle for a beam of light passing from water into air is 48.8 degress. This means that all light rays with an angle of incidence greater than this angle will be:
(a) absorbed (b) totally reflected
(c) partially reflected and partially transmitted (d) totally transmitted

(v) The distance between centre of curvature and pole of spherical mirror is equal to:
(a) $\frac{1}{4}f$ (b) $\frac{1}{2}f$ (c) $2f$ (d) f

(vi) Index of refraction depends upon:
(a) Focal length (b) Speed of light (c) Distance of image (d) Distance of object

(vii) The human eye has:
(a) Convex mirror (b) Concave mirror (c) Convex lens (d) Concave lens

(viii) The value of refractive index of water is:
(a) 2.33 (b) 1.36 (c) 1.33 (d) 1.39

(ix) Which of the following quantities is not changed during refraction of light?
(a) Direction (b) Speed (c) Frequency (d) Wavelength

(x) The power of lens is reciprocal of:
(a) Focal length (b) Dioptre (c) Focal point (d) Principle Focus

(xi) In a convex mirror, focus is:
(a) Under the mirror (b) Infront of the mirror (c) On the mirror (d) Behind the mirror

(xii) The refractive index of ice is:
(a) 1.52 (b) 1.31 (c) 2.42 (d) 1.33

2- Write short answers of the following questions. (18)

(i) State what is difference between regular and irregular reflection.
(ii) Define refractive index. What is its unit?
(iii) Define Snell's law. Write down its formula.
(iv) Describe types of reflection of light.
(v) Define the following terms of lenses:- Principal axis. Optical centre.
(vi) Show the image formation in convex lens with the help of three principal rays when object is at point 2F.
(vii) How do the jewellers identify diamond as real or a fake one?
(viii) State briefly the structure of camera.
(ix) What is meant by total internal reflection?

Test # 6	Chapter # 12	Geometrical Optics	Time: 30 Min

	A	B	C	D		A	B	C	D		A	B	C	D
1.	○	○	○	○	5.	○	○	○	○	9.	○	○	○	○
2.	○	○	○	○	6.	○	○	○	○	10.	○	○	○	○
3.	○	○	○	○	7.	○	○	○	○	11.	○	○	○	○
4.	○	○	○	○	8.	○	○	○	○	12.	○	○	○	○

1- Fill the box of correct answer in this manner that the ink is not come out from the box. (12)

(i) To protect the gold leaves from external disturbances in an electroscope a foil grounded is made of:
(a) Aluminium (b) Silver (c) Copper (d) Brass

(ii) The speed of light in water approximately:
(a) $3.3\times10^8 ms^{-1}$ (b) $2.5\times10^8 ms^{-1}$ (c) $2.3\times10^8 ms^{-1}$ (d) $2.6\times10^8 ms^{-1}$

(iii) The fomula for focal length is:
(a) $f=\frac{R}{2}$ (b) $f=\frac{R}{4}$ (c) $f=\frac{R}{3}$ (d) $f=\frac{R}{5}$

(iv) Optical fibres work on the principle of_______:
(a) Reflection (b) Refraction
(c) Total internal reflection (d) Diffraction

(v) The mathematical equation for magnification of compound microscope is:
(a) $\frac{L}{f_e}\left(1+\frac{d}{f_0}\right)$ (b) $\frac{f_0}{L}\left(1+\frac{d}{f_e}\right)$ (c) $f_e=\left(1+\frac{1}{f_0}\right)$ (d) $\frac{L}{f_0}\left(1+\frac{d}{f_e}\right)$

(vi) The power of lense is equal to.
(a) $\frac{1}{f}$ (b) $\frac{2}{f}$ (c) $\frac{3}{f}$ (d) $\frac{4}{f}$

(vii) Which of the following quantities is not changed during refraction of light?
(a) its direction (b) its speed (c) its frequency (d) its wavelength

(viii) A converging mirror with a radius of 20cm creats a real image 30 cm from the mirror. What is the object distance?
(a) 5.0 cm (b) 7.5 cm (c) 15 cm (d) 20 cm

(ix) An object is placed at the centre of curvature of a concave mirror. The image produced by mirror is located:
(a) out beyond the centre of curvature (b) at the centre of curvature
(c) between the centre of curvature and the focal point
(d) at the focal point

(x) An object is 14cm in front of a convex mirror. The image is 5.8 cm behind the mirror. What is the focal length of the mirror?
(a) 4.1 cm (b) 8.2 cm (c) -9.9 cm (d) 20 cm

(xi) The index of refraction depends on:
(a) the focal lenght (b) the speed of light (c) the image distance (d) the object distance

(xii) Which type of image is formed by a concave lens on a screen?
(a) inverted and real (b) inverted and virtual
(c) upright and real (d) upright and virtual

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2- Write short answers of the following questions. (18)

(i) What is critical angle? Write the relationship between the critical angle and the refrective index of a material?
(ii) Why is the driver's side mirror in many cars convex rather than plane or concave?
(iii) An object 4cm high is placed at a distance of 12cm from a convex lens of focal length 8cm. Calculate the position of the image.
(iv) State laws of reflection of light.
(v) Define pole and show it in diagram.
(vi) What is difference between concave and convex mirror.
(vii) What is refractive index of water and ice?
(viii) Define radius of curvature.
(ix) Define the terms resolving and magnifying power.

Test # 7	Chapter # 13	Electrostatics	Time: 30 Min

	A	B	C	D		A	B	C	D		A	B	C	D
1.	○	○	○	○	5.	○	○	○	○	9.	○	○	○	○
2.	○	○	○	○	6.	○	○	○	○	10.	○	○	○	○
3.	○	○	○	○	7.	○	○	○	○	11.	○	○	○	○
4.	○	○	○	○	8.	○	○	○	○	12.	○	○	○	○

1- Fill the box of correct answer in this manner that the ink is not come out from the box. (12)

(i) A positive and a negative charge are initally 4 cm apart. When they are moved closer together so that they are now only 1 cm apart, the force between them is:
(a) 4 times smaller than before (b) 4 times larger than before
(c) 8 times larger than before (d) 16 times larger than before

(ii) Five joules of work is needed to shift 10 C of charge from one place to another. The potential difference between the places is:
(a) 0.5 V (b) 2 V (c) 5 V (d) 10 V

(iii) Tow charged spheres are separated by 2mm. Which of the following would produce the greatest attractive force?
(a) +1q and +4q (b) -1q and -4q (c) +2q and +2q (d) +2q and -2q

(iv) Electric field lines:
(a) always cross each other (b) never cross each other
(c) cross each other in the region of strong field (d) cross each other in the region of weak field

(v) Capacitance is defined as:
(a) VC (b) Q/V (c) QV (d) V/Q

(vi) In electric circuit when electrons move from low to high potential they:
(a) Lose energy (b) Gain power (c) Gain potential (d) Lose identity

(vii) If 4 Jouls of work is done on a 2 coulomb charge against the direction of electric field, the value of electric potential is:
(a) 1 Volt (b) 8 Volt (c) 2 Volt (d) 4 Volt

(viii) If there capacitors of 3PF, 4PF and 5PF are connected in parallel with a battery of 6v. Total capacitance will be:

(a) 06PF (b) 12PF (c) 14PF (d) 17PF

(ix) The value of K in Coulomb's law is:
(a) $9\times10^9 Nm^2C^{2}$ (b) $9\times10^9 Nm^{2}C^{2}$ (c) $9\times10^9 m^{2}C^{2}$ (d) $9\times10^9 Nm^2C^2$

(x) Electroscope is used to detect:
(a) Current (b) Voltage (c) Charge (d) Electrons

(xi) Give the number of factors which effect the ability of a capacitor to store charge:
(a) 2 (b) 3 (c) 4 (d) 5

(xii) The unit of electric intensity is:
(a) mS^{-1} (b) NS (c) Nm (d) NC^{-1}

2- Write short answers of the following questions. (18)

(i) What do you know about electrolyte capacitor?
(ii) In what direction will a positive charge partical will move in an electric field?
(iii) Write the formula of parallel combination of capacitor.
(iv) Define electric field intensity and write down its formula.
(v) What is difference betweeen capacitor and dielectric?
(vi) Connected three capacitors in series and draw their circuit diagram.
(vii) State the difference between variable and fixed capacitors.
(viii) Write down two uses of capacitors.
(ix) How a capacitor stores a charge? Explain.

Nauman Sadaf

Test # 8	Chapter # 13	Electrostatics	Time: 30 Min

	A	B	C	D		A	B	C	D		A	B	C	D
1.	○	○	○	○	5.	○	○	○	○	9.	○	○	○	○
2.	○	○	○	○	6.	○	○	○	○	10.	○	○	○	○
3.	○	○	○	○	7.	○	○	○	○	11.	○	○	○	○
4.	○	○	○	○	8.	○	○	○	○	12.	○	○	○	○

1- Fill the box of correct answer in this manner that the ink is not come out from the box. (12)

(i) The electric lines of force were introduced by:
(a) Newton (b) Einstien (c) Coulomb (d) Faraday

(ii) How will be the electric lines of force where electric field is strong?
(a) Apart (b) From positive to negative
(c) From negative to positive (d) Closer

(iii) Capacitors are used to store:
(a) Current (b) Voltage (c) Charge (d) Resistance

(iv) The unit of electric power is:
(a) Ampere (b) Watt (c) Joule (d) Volt

(v) Formula of electric intensity is:
(a) $E=\frac{V}{q_o}$ (b) $E=\frac{K}{q_o}$ (c) $E=\frac{F}{q_o}$ (d) $E=\frac{W}{V}$

(vi) SI unit of capacitance is:
(a) Newton (b) Volt (c) Coulomb (d) Farad

(vii) A positive electric charge:
(a) attracts other positive charge (b) repels other positive charge
(c) attracts a neutral charge (d) repels a neutral charge

(viii) An object gains excess negative charge after being rubbed against another object which is:
(a) neutral (b) negatively charged (c) positively charged (d) either a, b, or c

(ix) Two uncharged objects A and B are rubbed against each other. When object B is placed near a negatively charged object C, the two objects repel each other. Which of these statements is true about object A?
(a) remains uncharged (b) becomes positively charged
(c) becomes negatively charged (d) unpredictable

(x) When you rub a plastic rod against your hair several times and put it near some bits of paper, the pieces of papers are attracted towards it. What does this observation indicate?
(a) the rod and the paper are oppositely charged (b) the rod acquires a positive charge
(c) the rod and the paper have te same charges (d) the rod acquires a negative charge

(xi) According to Coulomb's law. What happens to the attraction of two oppositely charged objects as their distance of separation increases?
(a) increases (b) decreases (c) remains uncharged (d) cannot be determined

(xii) The Coulomb's law is valid for the charges which are:
(a) moving and point charges (b) moving and non-point charges
(c) stationary and point charges (d) stationary and large size charges

---

2- Write short answers of the following questions. (18)

(i) How nature of charges are detected by using electroscope?
(ii) Write any two properties of electric field lines.
(iii) How capacitor works in resonant circuit?
(iv) What is the relation between electric potential and potential energy?
(v) What is difference between electric field and electric intensity?
(vi) Define capacitance? What is its SI unit?
(vii) Three capacitors with capacitance of 3PF, 4PF and 5PF are arranged in series combination to a battey of 6v. Find total capacitance.
(viii) Define Coulomb's law and give relation to find F.
(ix) Is electric intensity a vector quantity? Why?

Test # 9	Chapter # 14	Current Electricity	Time: 30 Min

	A	B	C	D		A	B	C	D		A	B	C	D
1.	○	○	○	○	5.	○	○	○	○	9.	○	○	○	○
2.	○	○	○	○	6.	○	○	○	○	10.	○	○	○	○
3.	○	○	○	○	7.	○	○	○	○	11.	○	○	○	○
4.	○	○	○	○	8.	○	○	○	○	12.	○	○	○	○

1- Fill the box of correct answer in this manner that the ink is not come out from the box. (12)

(i) If we double both the current and the voltage in a circuit while keeping its resistance constant the power:
(a) remains uncharged (b) halves (c) doubles (d) quater

(ii) What is the power rating of a lamp connected to a 12V source when it carries 2.5 A?
(a) 4.8 W (b) 14.5 W (c) 30 W (d) 60 W

(iii) The combined resistance of two identical resistors, connected in series is 8Ω. Their combined resistance in a parallel arrangement will be:
(a) 2Ω (b) 4Ω (c) 8Ω (d) 12Ω

(iv) Electrical energy is given by:
(a) QR (b) QV (c) QC (d) Qt

(v) 1kwh is equal to:
(a) 3.6MJ (b) 3.6KJ (c) $3.6J^{-1}$ (d) 3.6J

(vi) The electric power of washing machine in watt is:
(a) 50 (b) 750 (c) 100 (d) 800

(vii) Unit of resistance is:
(a) Ampere (b) Volt (c) Ohm (d) Farad

(viii) The unit of current is:
(a) Volt (b) Ampere (c) Joule (d) Coulomb

(ix) The formula to find the magnitude of current is.
(a) $I = \frac{Q}{t}$ (b) $I = QV$ (c) $I = CV$ (d) $I = \frac{C}{Q}$

(x) The rate of flow of charges is called:
(a) Current (b) Volt (c) Ohm (d) Coulomb

(xi) Formula of e.m.f is equal to:
(a) $E = J/Q$ (b) $E = W/I$ (c) $E = W/Q$ (d) $E = Q/I$

(xii) If emf of a battery is 2V, the energy supplied by battery is_____, when one coulomb of charge flows through the closed circuit.
(a) 5 joules (b) 4 joules (c) 2.8 joules (d) 2 joules

✂---

2- Write short answers of the following questions. (18)

(i) How does a circuit beaker work as a precautionary applicance?
(ii) Write down two features of parallel combination of resistance.
(iii) In order to measure current in a circuit, why ammeter is always connected in series?
(iv) State Joule's Law. Write down its formula.
(v) Define electro moto force.
(vi) Define resistance and give the name of unit.
(vii) Define potential difference and write the name of unit.
(viii) If 0.5C, charge passes through a wire in 10S, then, what will be value of current flowing through the wire?
(ix) Define resistivity and write the formula.

Test # 10	Chapter # 14	Current Electricity	Time: 30 Min

	A	B	C	D		A	B	C	D		A	B	C	D
1.	○	○	○	○	5.	○	○	○	○	9.	○	○	○	○
2.	○	○	○	○	6.	○	○	○	○	10.	○	○	○	○
3.	○	○	○	○	7.	○	○	○	○	11.	○	○	○	○
4.	○	○	○	○	8.	○	○	○	○	12.	○	○	○	○

1- Fill the box of correct answer in this manner that the ink is not come out from the box. (12)

(i) If emf of a battery is 2V, the energy supplied by battery is_____, when one coulomb of charge flows through the closed circuit.

(a) 5 joules (b) 4 joules (c) 2.8 joules (d) 2 joules

(ii) The mathematical form of Ohm's law is:

(a) V = I/R (b) V = R/I (c) V = IR (d) V = m/v

(iii) An ideal Voltmeter has a Resistance:

(a) Very Low (b) Very High (c) Nothing (d) Low

(iv) In Tungsten Filament, the Potential given to produce the beam of electron by Thermionic Emission is:

(a) 6 V (b) 7 V (c) 8 V (d) 9 V

(v) It blocks DC current but allows AC current to pass through the circuit:

(a) Capacitor (b) Resistance (c) Specific resistance (d) Thermometer

(vi) One micro ampere is equal to:

(a) $10^{3} A$ (b) $10^{6} A$ (c) $10^{9} A$ (d) $10^{12} A$

(vii) An electric current in conductors is due to the flow of:

(a) positive ions (b) negative ions (c) positive charges (d) free electrons

(viii) What is the voltage across a 6Ω resistor when 3 A of current passes through it?

(a) 2 V (b) 9 V (c) 18 V (d) 36 V

(ix) What happens to the intensity or the brightness of the lamps connected in series as more and more lamps are added?

(a) increases (b) decreases (c) remains the same (d) cannot be predicted

(x) Why should household appliances be connected in parallel with the voltage source?

(a) to increases the resistance of the circuit (b) to decrease the resistance of the circuit

(c) to provide each appliance the same voltage as the power source

(d) to provide each appliance the same current as the power source

(xi) Electric potential and e.m.f.

(a) are the same terms (b) are the different terms

(c) have different units (d) both (b) and (c)

(xii) When we double the voltage in a simple electric circuit, we double the:

(a) current (b) power (c) resistance (d) both (a) and (b)

✂--

2- Write short answers of the following questions. (18)

(i) A current of 3mA is flowing through wire for 1 minute. What is the charge flowing through wire?

(ii) How does the earth wire save us from electric shock, when the line wire of the electric applicances gets demaged?

(iii) How short circuit happens due to decrease in resistance of the circuit?

(iv) Why the resistance of conductor rises with increase in temperature?

(v) What is SI unit of resistance? Define it.

(vi) Define conductors and insulators.

(vii) If two resistors $6K\Omega$ and $4K\Omega$ are connected in series across a 10v battery then find equivalent resistance.

(viii) Define kilowatt hour. Also write formula to find energy in kilowatt hour.

(ix) Prove electric power $P = I^2 R$ .FS/14

Test # 11	Chapter # 15	Electromagnetism	Time: 30 Min

	A	B	C	D		A	B	C	D		A	B	C	D
1.	○	○	○	○	5.	○	○	○	○	9.	○	○	○	○
2.	○	○	○	○	6.	○	○	○	○	10.	○	○	○	○
3.	○	○	○	○	7.	○	○	○	○	11.	○	○	○	○
4.	○	○	○	○	8.	○	○	○	○	12.	○	○	○	○

1- Fill the box of correct answer in this manner that the ink is not come out from the box. (12)

(i) The direction of induced e.m.f in a circuit is in accordance with conservation of:
(a) mass (b) charge (c) momentum (d) energy

(ii) The step-up transformer:
(a) increases the input current (b) increases the input voltage
(c) has more turns in the primary (d) has less turns in the secondary coil

(iii) The turn ratios of a transformer is 10. it means:
(a) $I_s = 10I_p$ (b) $N_s = \frac{N_p}{10}$ (c) $N_s = 10N_p$ (d) $V_s = \frac{V_p}{10}$

(iv) Transformer is used to change the value of:
(a) Charge (b) Energy (c) Power (d) Voltage

(v) Which thing works on the principle of electromagnetic induction in hydro electric power house:
(a) Motor (b) Generator (c) Galvanic cell (d) Voltaic cell

(vi) On which principle induced e.m.f. is produced in the secondary coil?
(a) Mutual Induction (b) Self induction
(c) Electric induction (d) Induced current

(vii) Turn ratio in a transformer is 1:100. It means that:
(a) $Vs = \frac{Vp}{10}$ (b) $N_S = 10N_P$ (c) $N_S = \frac{N_P}{10}$ (d) $I_S = 10I_P$

(viii) In D.C. Motor, coil can rotate in magnetic field by an angle of:
(a) 90^o (b) 60^o (c) 45^o (d) 30^o

(ix) A device which is used to increase or decrease the voltage:
(a) Transformer (b) Motor (c) Generator (d) Voltmeter

(x) The study of magnetic effects of current is called:
(a) Magnetism (b) Electro Magnetism
(c) Electric capcity (d) Electricity

(xi) Which device is based on the principle of electromagnetism?
(a) Electric motor (b) T.V (c) CDS (d) Mobile phone

(xii) Kinetic energy of mass spring system is maximum at:
(a) Extreme position (b) Mean position (c) Both A and B (d) None of these

✂--

2- Write short answers of the following questions. (18)

(i) Define A.C. generator.
(ii) What is relay? How its works?
(iii) On what principle does D.C. motor work?
(iv) What is Transformer? On what principle it works?
(v) Define electromagnetic induction.
(vi) What is difference between generator and D.C. motor?
(vii) Why a conductor wire generates a voltage while moving through a magnetic field?
(viii) Define Right Hand rule.
(ix) State Fleming's Left Hand rule.

Test # 12	Chapter # 15	Electromagnetism	Time: 30 Min

1- **Fill the box of correct answer in this manner that the ink is not come out from the box.** **(12)**

(i) The step down transformer:
(a) Decreases the input current (b) Decreases the input voltage
(c) Has more turns in secondary coil (d) Has less turns in primary coil

(ii) On which principle induced e.m.f. is produced in the secondary coil?
(a) Mutual Induction (b) Self induction (c) Electric induction (d) Induced current

(iii) Turn ratio in a transformer is 1:100. It means that:
(a) $Vs=\frac{Vp}{10}$ (b) $N_S=10N_P$ (c) $N_S=\frac{N_P}{10}$ (d) $I_S=10I_P$

(iv) In D.C. Motor, coil can rotate in magnetic field by an angle of:
(a) 90^{o} (b) 60^{o} (c) 45^{o} (d) 30^{o}

(v) A device which is used to increase or decrease the voltage:
(a) Transformer (b) Motor (c) Generator (d) Voltmeter

(vi) The study of magnetic effects of current is called:
(a) Magnetism (b) Electro Magnetism (c) Electric capcity (d) Electricity

(vii) Which statement is true about the magnetic poles?
(a) unlike poles repel (b) like poles attract
(c) magnetic poles do not effect each other (d) a single magnetic pole does not exist

(viii) What is the direction of the magnetic field lines inside a bar magnet?
(a) from north pole to south pole (b) from south pole to north pole
(c) from side to side (d) there are no magnetic field lines

(ix) The presence of a magnetic field can be detected by a:
(a) small mass (b) stationary positive charge
(c) stationary negative charge (d) magnetic compass

(x) If the current in a wire which is placed perpendicular to a magnetic field increases, the force on the wire:
(a) increases (b) decreases (c) remains the same (d) will be zero

(xi) A.D.C motor converts:
(a) mechanical energy into electrical energy (b) mechanical energy into chemical energy
(c) electrical energy into mechanical energy (d) electrical energy into chemical energy

(xii) Which part of a D.C. motor reverses the direction of current through the coil every half-cycle?
(a) the armature (b) the commutator (c) the brushes (d) the slip rings

✂---

2- **Write short answers of the following questions.** **(18)**

(i) For an ideal transformer prove that $\frac{V_p}{V_s}=\frac{I_s}{I_p}$.
(ii) What is the working principle of A.C. generator?
(iii) How the direction of current is reversed in the armature of D.C. Motor?
(iv) Define electromagnet. How many poles it has?
(v) What is the difference between step up and step down transformers?
(vi) What is the main difference between generator and motor?
(vii) Define mutual induction.
(viii) Define Lenz's law.
(ix) How many coils are used in a transformer? Also name them.

Test # 13	Chapter # 16	Basic Electronics	Time: 30 Min

	A	B	C	D		A	B	C	D		A	B	C	D
1.	○	○	○	○	5.	○	○	○	○	9.	○	○	○	○
2.	○	○	○	○	6.	○	○	○	○	10.	○	○	○	○
3.	○	○	○	○	7.	○	○	○	○	11.	○	○	○	○
4.	○	○	○	○	8.	○	○	○	○	12.	○	○	○	○

1- Fill the box of correct answer in this manner that the ink is not come out from the box. (12)

(i) The output of a NAND gate is 0 when:
(a) both of its inputs are 0 (b) both of its inputs are 1
(c) any of its inputs is 0 (d) any of its inputs is 1

(ii) In C.R.O. the potential of Gird is:
(a) Positive (b) Zero (c) Neutral (d) Negative

(iii) Logic operation performed by the gate: (A, B → X)
(a) AND (b) NOR (c) NAND (d) OR

(iv) The output of OR gate will be 0 when:
(a) A=0 , B=0 (b) A=1, B=1 (c) A=0 , B=1 (d) A=1 , B=0

(v) The process in which electrons are emitted from a hot metal surface is called:
(a) Boiling (b) Evaporation (c) Conduction (d) Thermionic emission

(vi) Number of input terminals in NOT gate is:
(a) 1 (b) 2 (c) 3 (d) 4

(vii) The cathode ray oscilloscope consists of main parts:
(a) Two (b) Three (c) Four (d) Five

(viii) George Bole invented.
(a) Boolean Algebra (b) Arithemetic Algebra (c) Mean Algebra (d) Geometry

(ix) The basic logic operation of NOT gate is called:
(a) Inversion (b) Non-inversion
(c) Invesrsion and non - inversion both (d) None of these

(x) If x = A.B then X = 0 when:
(a) A = 0, B = 0 (b) A = 0, B = 1 (c) A = 1, B = 0 (d) A = 1, B = 1

(xi) The screen of a cathode ray tube consists of material called:
(a) Zinc (b) Iron (c) Phosphorus (d) Glass

(xii) The equation of Not Operation is:
(a) $X = A.B$ (b) $X = A + B$ (c) $X = A - B$ (d) $X = \overline{A}$

✂--

2- Write short answers of the following questions. (18)

(i) What is the difference between analogue and digital quantities?
(ii) What is meant by AND operation? Draw the diagram of AND gate.
(iii) What is cathode ray oscilloscope? Write down the names of its components.
(iv) Draw Truth Table for NOR gate.
(v) What is electron gun? Write down its function in C.R.O.
(vi) What is meant by Boolean Algebra? How is it represented?
(vii) Draw diagram of NOT gate and its output values table.
(viii) Write down the names of universal logic gates.
(ix) Name two factors which can enhance thermionic emission.

Nauman Sadaf

Test # 14	Chapter # 16	Basic Electronics	Time: 30 Min

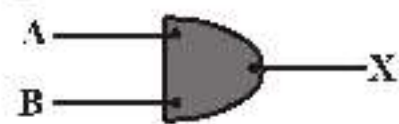
	A	B	C	D		A	B	C	D		A	B	C	D
1.	○	○	○	○	5.	○	○	○	○	9.	○	○	○	○
2.	○	○	○	○	6.	○	○	○	○	10.	○	○	○	○
3.	○	○	○	○	7.	○	○	○	○	11.	○	○	○	○
4.	○	○	○	○	8.	○	○	○	○	12.	○	○	○	○

1- Fill the box of correct answer in this manner that the ink is not come out from the box. (12)

(i) Equation of "AND" operation is:
(a) $X = A + B$ (b) $X = A.B$ (c) $X = \overline{A}$ (d) $X = \overline{A.B}$

(ii) The process by which electrons are emitted by a hot metal surface is known as:
(a) boiling (b) evaporation (c) conduction (d) thermionic emission

(iii) The particles emitted from a hot cathode surface are:
(a) positive ions (b) negative ions (c) protons (d) electrons

(iv) The logical operation performed by this gate is:
A, B, X
(a) AND (b) NOR (c) NAND (d) OR

(v) AND gate can be formed by using two:
(a) NOT gates (b) OR gate (c) NOR gates (d) NAND gate

(vi) The output of a two input NOR gate is 1 when:
(a) A is 1 and B is 0 (b) A is 0 and B is 1 (c) both A and B are 0 (d) both A and B are 1

(vii) If X = A.B, then X is 1 when:
(a) A and B are 1 (b) A or B is 0 (c) A is 0 and B is 1 (d) A is 1 and B is 0

(viii) The output of OR gate will be 0 when:
(a) A=0 , B=0 (b) A=1, B=1 (c) A=0 , B=1 (d) A=1 , B=0

(ix) The process in which electrons are emitted from a hot metal surface is called:
(a) Boiling (b) Evaporation (c) Conduction (d) Thermionic emission

(x) Number of input terminals in NOT gate is:
(a) 1 (b) 2 (c) 3 (d) 4

(xi) The cathode ray oscilloscope consists of main parts:
(a) Two (b) Three (c) Four (d) Five

(xii) George Bole invented.
(a) Boolean Algebra (b) Arithemetic Algebra (c) Mean Algebra (d) Geometry

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2- Write short answers of the following questions. (18)

(i) Define analogue and digital electronics.
(ii) How is NAND gate made? Also write its symbol.
(iii) Make the truth table of AND operation.
(iv) What is meant by ADC and DAC?
(v) Give the names of parts of cathode ray oscilloscope.
(vi) For what purpose electron gun is in cathode ray oscilloscope?
(vii) Give truth table for NOR Operation.
(viii) Define thermionic emission.
(ix) Make the truth table and symbol of AND gate.

Test # 15	Chapter # 17	Information & Communication Technology	Time: 30 Min

	A	B	C	D		A	B	C	D		A	B	C	D
1.	○	○	○	○	5.	○	○	○	○	9.	○	○	○	○
2.	○	○	○	○	6.	○	○	○	○	10.	○	○	○	○
3.	○	○	○	○	7.	○	○	○	○	11.	○	○	○	○
4.	○	○	○	○	8.	○	○	○	○	12.	○	○	○	○

1- Fill the box of correct answer in this manner that the ink is not come out from the box. (12)

(i) What does the term e-mail stand for?
(a) emergency mail (b) electronic mail (c) extra mail (d) external mail

(ii) 1024 kilobytes are equal to:
(a) 1PB (b) 1TB (c) 1GB (d) 1MB

(iii) The storage power of DVD is:
(a) 17 kilobyte (b) 17 gegabyte (c) 17 megabyte (d) 17 hectobyte

(iv) A mega byte has how many kilo bytes:
(a) 1004 (b) 1014 (c) 1024 (d) 1034

(v) Microwaves are used in:
(a) Radio (b) T.V. (c) Mobile phone (d) All these

(vi) One byte is equal to:
(a) 7 bits (b) 5 bits (c) 8 bits (d) 9 bits

(vii) Which is not a hardware device?
(a) CPU (b) Window (c) Keyboard (d) Mouse

(viii) The technology used in cell phone or Mobile phone is:
(a) Computer (b) Radar (c) Radio (d) Satellite

(ix) It is a device used to transport files from one computer to another.
(a) Compact disc (b) Laser (c) Flash drive (d) Printer

(x) With broadband information can be loaded.
(a) In 1 min (b) In 1 s (c) In 1 day (d) In 2 days

(xi) If C.D is made of soft elastic material then it is called:
(a) Hard disc (b) Floppy disc (c) Compound disc (d) Metallic disc

(xii) In computer terminology the term machinery refers to:
(a) Software (b) Hardware (c) Data (d) Procedure

2- Write short answers of the following questions. (18)

(i) What is photo phone?
(ii) What do you mean by information of technology?
(iii) Write two uses of computer.
(iv) Describe any two hazards of radiations.
(v) How fax machine works?
(vi) Differentiate between Ram and Rom?
(vii) What is a computer? Write down the names of its main parts.
(viii) Write down a brief note on electronic mail.
(ix) Define information and communication technology (ICT).

Test # 16	Chapter # 17	Information & Communication Technology	Time: 30 Min

	A	B	C	D		A	B	C	D		A	B	C	D
1.	○	○	○	○	5.	○	○	○	○	9.	○	○	○	○
2.	○	○	○	○	6.	○	○	○	○	10.	○	○	○	○
3.	○	○	○	○	7.	○	○	○	○	11.	○	○	○	○
4.	○	○	○	○	8.	○	○	○	○	12.	○	○	○	○

1- Fill the box of correct answer in this manner that the ink is not come out from the box. (12)

(i) The computer-based infromation system (CBIS) is formed by:
(a) 4 (b) 3 (c) 5 (d) 6

(ii) Telephone was first invented in:
(a) 1676 (b) 1776 (c) 1876 (d) 1976

(iii) A typical floppy disk has a storage capacity between:
(a) 1-3 MB (b) 2-3 MB (c) 3-5 MB (d) 6-10 MB

(iv) Telephone system has parts:
(a) 2 (b) 4 (c) 5 (d) 6

(v) Example of primary memory is:
(a) Read only memory (RAM) (b) Hard disk
(c) Floppy disk (d) Audio cassette

(vi) C.D. stands for:
(a) Computer disc (b) Compact disc (c) Chemical disc (d) All of these

(vii) In computer terminology information means:
(a) any data (b) raw data (c) processed data (d) large data

(viii) Which is the most suitable means of reliable continuous communication between an orbiting satellite and Earth?
(a) microwaves (b) radiowaves (c) sound waves (d) any light wave

(ix) The basic operations performed by a computer are:
(a) arithmetic operations (b) non-arithmetic operations
(c) logical operations (d) both (a) and (c)

(x) The brain of any computer system is:
(a) monitor (b) memory (c) CPU (d) control unit

(xi) Which of the following is not processing?
(a) arranging (b) manipulating (c) calculating (d) gathering

(xii) From which of the following you can get information almost about everything:
(a) book (b) teacher (c) computer (d) internet

2- Write short answers of the following questions. (18)

(i) What is the difference between primary memory and secondary memory?
(ii) For storing data, is the floppy disk more better or the hard disk?
(iii) What is meant by CPU?
(iv) What do you know about the word processing?
(v) Write down the two advantages of electronic mail.
(vi) What is difference between data and information?
(vii) Define hardware.
(viii) Write down four uses of internet.
(ix) Define telecommunication.

Test # 17	Chapter # 18	Atomic & Nuclear Physics	Time: 30 Min

	A	B	C	D		A	B	C	D		A	B	C	D
1.	◯	◯	◯	◯	5.	◯	◯	◯	◯	9.	◯	◯	◯	◯
2.	◯	◯	◯	◯	6.	◯	◯	◯	◯	10.	◯	◯	◯	◯
3.	◯	◯	◯	◯	7.	◯	◯	◯	◯	11.	◯	◯	◯	◯
4.	◯	◯	◯	◯	8.	◯	◯	◯	◯	12.	◯	◯	◯	◯

1- Fill the box of correct answer in this manner that the ink is not come out from the box. (12)

(i) Release of energy by the Sun is due to:
(a) nuclear fission (b) nuclear fusion (c) burning of gases (d) chemical reaction

(ii) When a heavy nucleus splits into two lighter nuclei, the process would:
(a) release nuclear energy (b) absorb nuclear energy
(c) release chemical energy (d) absorb chemical energy

(iii) The reason carbon-dating works is that:
(a) plants and animals are such strong emitters of carbon-14
(b) after a plant or animals dies, it stops taking in fresh carbon-14
(c) there is so much non-radioactive carbon dioxide in the air
(d) when a plant or an animal dies.

(iv) Half life of radium - 226 is:
(a) 1220 years (b) 1420 years (c) 1620 years (d) 1820 years

(v) In $^{235}_{92}U$, 92 is the number of:
(a) Protons (b) Neutrons (c) Protons and neutrons (d) Neutrons and electrons

(vi) The half life of Plautonium $^{236}_{94}Pu$ in years is:
(a) 0.85 (b) 1.85 (c) 2.85 (d) 3.85

(vii) When we heat the metal at high temperature they emit:
(a) Holes (b) Protons (c) Neutrons (d) Electrons

(viii) The half life of carobn - 14 is:
(a) 3750 years (b) 5370 years (c) 5730 years (d) 7530 years

(ix) Atomic mass number can be found by relation:
(a) Z - A (b) A + N (c) Z + N (d) Z + A

(x) The half life of lead is:
(a) 10.6 hours (b) 10.4 hours (c) 10.2 hours (d) 10.00 hours

(xi) The isotopes of hydrogen in number are:
(a) 3 (b) 4 (c) 2 (d) 1

(xii) The half life of Iodine isotope $^{131}_{53}I$ in days is:
(a) 5.07 (b) 6.07 (c) 7.07 (d) 8.07

✂---

2- Write short answers of the following questions. (18)

(i) Define Nuclear Fission and Nuclear Fusion.
(ii) What is meant by isotopes? Write the names of isotopes of hydrogen.
(iii) Define atomic number and mass number.
(iv) Define half life. Write down the half life of $^{14}_{6}C$.
(v) Write difference between stable and unstable unclei.
(vi) Define ionization.
(vii) Explain Gama Decay with the help of example.
(viii) Write down two uses of radio isotopes.
(ix) What is meant by tracer?

Test # 18	Chapter # 18	Atomic & Nuclear Physics	Time: 30 Min

	A	B	C	D		A	B	C	D		A	B	C	D
1.	○	○	○	○	5.	○	○	○	○	9.	○	○	○	○
2.	○	○	○	○	6.	○	○	○	○	10.	○	○	○	○
3.	○	○	○	○	7.	○	○	○	○	11.	○	○	○	○
4.	○	○	○	○	8.	○	○	○	○	12.	○	○	○	○

1- Fill the box of correct answer in this manner that the ink is not come out from the box. (12)

(i) To diagnose the brain tumour, it is used:
(a) Iodine - 131 (b) Phosphorus-32 (c) Cobalt-60 (d) Carbon-14

(ii) Generally an atom is represented by the symbol:
(a) X (b) $^{A}_{Z}X$ (c) $^{Z}_{A}X$ (d) ^{A}X

(iii) The Proton is heavier then an electron:
(a) 1836 (b) 1863 (c) 1870 (d) 1800

(iv) The rays used during brain radiotherapy are:
(a) Alpha rays (b) Beta rays (c) Gamma rays (d) X rays

(v) In which process sun gains energy:
(a) Nuclear fission (b) Nuclear fusion (c) Burning of gases (d) Chemical reaction

(vi) Half life of hydrogen is:
(a) 12.3 years (b) 5730 years (c) 30 years (d) 2.85 years

(vii) Isotopes are atoms of same element with different:
(a) atomic mass (b) atomic number (c) number of protons (d) number of electrons

(viii) One of the isotopes of uranium is $^{238}_{92}U$. The number of neutrons in this isotope is:
(a) 92 (b) 146 (c) 238 (d) 330

(ix) Which among the following radiations has more penetrating power?
(a) a beta particle (b) a gamma ray
(c) an alpha particle (d) all have the same penetrating ability

(x) What happens to the atomic number of an element which emits one alpha particle and a beta particle?
(a) increases by 1 (b) stays the same (c) decreases by 2 (d) decreases by 1

(xi) The half-life of a certain isotope is 1 day. What is the quantity of the isotope after 2 days?
(a) one half (b) one quarter (c) one eighth (d) none of these

(xii) When Uranium (92 protons) ejects a beta particle, how many protons are left in the remaining nucleus?
(a) 92 protons (b) 91 protons (c) 90 protons (d) 93 protons

✂--

2- Write short answers of the following questions. (18)

(i) How much a 1g sample of pure radioactive material would be left after four half lives?
(ii) Find the number of protons and neutrons in the nuclide defined by $^{13}_{6}x$.
(iii) What is meant by half life of a radioactive element?
(iv) Briefly explain the carbon dating.
(v) Define transmutation.
(vi) Define natural radioactivity.
(vii) Define atomic mass number and write its formula.
(viii) Define penetrating ability.
(ix) What is meant by Artificial Radioactivity?

Nauman Sadaf

Test # 19	Chapter # 10, 11	Simple Harmonic Motion & Waves To Sound	Time: 30 Min

	A	B	C	D		A	B	C	D		A	B	C	D
1.	◯	◯	◯	◯	5.	◯	◯	◯	◯	9.	◯	◯	◯	◯
2.	◯	◯	◯	◯	6.	◯	◯	◯	◯	10.	◯	◯	◯	◯
3.	◯	◯	◯	◯	7.	◯	◯	◯	◯	11.	◯	◯	◯	◯
4.	◯	◯	◯	◯	8.	◯	◯	◯	◯	12.	◯	◯	◯	◯

1- Fill the box of correct answer in this manner that the ink is not come out from the box. **(12)**

(i) Wave equation is:
(a) $f\lambda$ (b) λv (c) $\frac{1}{\lambda v}$ (d) $\frac{v}{\lambda}$

(ii) Which is example of longitudinal waves?
(a) Sound waves (b) Light waves (c) Radio waves (d) Water waves

(iii) Radio waves are:
(a) Longitudinal waves (b) Transverse waves
(c) Electromagnetic waves (d) All of these

(iv) When a body moves to and fro about a point, its motion is called:
(a) Random motion (b) Vibratory motion
(c) Linear motion (d) Rotatory motion

(v) Ripple tank is a device used to produce.
(a) Water waves (b) Sound waves (c) Mechanical waves (d) Electrical waves

(vi) A wave moves on a slinky with frequency of 4HZ and wavelength of 0.4m. Its waves sped will be:
(a) $0.6ms^{-1}$ (b) $1.6ms^{-1}$ (c) $2.6ms^{-1}$ (d) $3.6ms^{-1}$

(vii) Formula for finding the speed of sound is:
(a) $v = f\lambda$ (b) $f = v\lambda$ (c) $v = \frac{f}{\lambda}$ (d) $f = \frac{v}{\lambda}$

(viii) Speed of sound in air at 25°C is.
(a) $331ms^{-1}$ (b) $346ms^{-1}$ (c) $386ms^{-1}$ (d) $1290ms^{-1}$

(ix) Which is an example of a longitudinal wave?
(a) sound wave (b) light wave (c) radio wave (d) water wave

(x) How does sound travel from its source to your ear?
(a) by charges in air pressure (b) by vibrations in wires or strings
(c) by electromagnetic wave (d) by infrared waves

(xi) Which form of energy is sound?
(a) electrical (b) mechanical (c) thermal (d) chemical

(xii) Astronauts in space need to communicate with each other by radio links because:
(a) sound waves travel very slowly in space (b) sound waves travel very fast in space
(c) sound waves cannot travel in space (d) sound waves have low frequency in space

2- Write short answers of the following questions. **(18)**

(i) Distinguish between longitudinal and transverse waves with a suitable example.
(ii) Define simple pendulum. Write down its time period equation.
(iii) With respect to simple pendulum, what is difference between vibration and amplitude?
(iv) Define time period and frequency.
(v) Define acoustic protection.
(vi) Name the characteristics of sound.
(vii) What is the speed of sound in air at 25°C.
(viii) What is meant by sound level? Write its formula.
(ix) What is meant by noise? Write its sources.

Test # 20	Chapter # 10, 11	Simple Harmonic Motion & Waves To Sound	Time: 30 Min

	A	B	C	D		A	B	C	D		A	B	C	D
1.	○	○	○	○	5.	○	○	○	○	9.	○	○	○	○
2.	○	○	○	○	6.	○	○	○	○	10.	○	○	○	○
3.	○	○	○	○	7.	○	○	○	○	11.	○	○	○	○
4.	○	○	○	○	8.	○	○	○	○	12.	○	○	○	○

1- Fill the box of correct answer in this manner that the ink is not come out from the box. (12)

(i) If the time period is given then frequency is calculated as:
(a) $f=\frac{1}{T}$ (b) $f=\frac{2}{T}$ (c) $f=\frac{3}{T}$ (d) $f=\frac{4}{T}$

(ii) Two consective waves compression and Rarefactions is called.
(a) Time period (b) Frequency (c) Wave length (d) Focal length

(iii) When did Christian Huygens invent the pendulum clock?
(a) 1656 (b) 1756 (c) 1856 (d) 1956

(iv) The unit of frequency is:
(a) Hz (b) Meter (c) Second (d) Joule

(v) The formula of Hook's law is:
(a) $K=\frac{-2F}{X}$ (b) $F=-KX$ (c) $X=-FK$ (d) $K=-FX$

(vi) The number of waves passing through a point in one second is called:
(a) Frequency (b) Displacement (c) Wavelength (d) Amplitude

(vii) The loudness of a sound is most closely related to its:
(a) frequency (b) period (c) wavelength (d) amplitude

(viii) For a normal person, audible frequency range for sound wave lie between:
(a) 10 Hz and 10 kHz (b) 20 Hz and 20 kHz (c) 25 Hz and 25 kHz (d) 30 Hz and 30 kHz

(ix) When the frequency of a sound wave is increased, which of the following will decrease?
i. Wavelength ii. Period iii. Amplitude
(a) i only (b) iii only (c) i and ii only (d) i and iii only

(x) Intensity level of the sound produced by mosquito buzzing is________:
(a) 70dB (b) 90dB (c) 100dB (d) 40dB

(xi) Sound level in dB is given by:
(a) $10\log\frac{I}{I_o}(dB)$ (b) $\log\frac{I}{I_o}(dB)$ (c) $10\log\frac{I_o}{I}(dB)$ (d) $\log\frac{I_o}{I}(dB)$

(xii) The intensity level of train siren is:
(a) 150 dB (b) 130 dB (c) 100 dB (d) 120 dB

2- Write short answers of the following questions. (18)

(i) Define simple harmonic motion. Also write a feature of SHM.
(ii) Define wave equation and write down its formula?
(iii) A ball is dropped from a certain height onto the floor and keeps bouncing. Is the motion of the ball simple harmonic? Explain.
(iv) What is the difference between mechanical waves and electromagnetic waves?
(v) What is sound? What are necessary conditions for generation of sound?
(vi) What is the reflection of sound?
(vii) What is meant by ultrasound?
(viii) What is meant by soundless whistle?
(ix) Define sound. What will be the speed of sound at 25°C.

Test # 21	Chapter # 12, 13	Geometrical Optics To Electrostatics	Time: 30 Min

	A	B	C	D		A	B	C	D		A	B	C	D
1.	○	○	○	○	5.	○	○	○	○	9.	○	○	○	○
2.	○	○	○	○	6.	○	○	○	○	10.	○	○	○	○
3.	○	○	○	○	7.	○	○	○	○	11.	○	○	○	○
4.	○	○	○	○	8.	○	○	○	○	12.	○	○	○	○

1- Fill the box of correct answer in this manner that the ink is not come out from the box. (12)

(i) The refractive index of crown glass is:
(a) 2.42 (b) 2.21 (c) 1.66 (d) 1.52

(ii) The refractive index is equal to.
(a) $n=\frac{c}{v}$ (b) $n=cv$ (c) $n=\frac{v}{c}$ (d) $n=\frac{1}{cv}$

(iii) The value of Refractive Index of Air is:
(a) 2 (b) 3 (c) 1 (d) 4

(iv) The change in the focal length of the eye lens is called:
(a) Modification (b) Induction (c) Accomodation (d) Distinct Vision

(v) Snell's law is:
(a) $n=\frac{Sin\hat{i}}{Sin\hat{r}}$ (b) $n=\frac{Sin\hat{r}}{Sin\hat{i}}$ (c) $n=Sin\hat{r}$ (d) $n=Sin\hat{i}$

(vi) The speed of light in glass is:
(a) $2\times10^{8}ms^{\ 1}$ (b) $2\times10^{\ 8}ms^{\ 1}$ (c) $3\times10^{8}ms^{\ 1}$ (d) $3\times10^{\ 8}ms^{\ 1}$

(vii) The formula of electric field intensity is:
(a) $\frac{F}{q_o}$ (b) Fq_o (c) $\frac{1}{Fq_o}$ (d) $\frac{q_o}{F}$

(viii) The turn ratio of a transformer is 10. It means:
(a) $I_S=10I_P$ (b) $N_S={N_P}/{10}$ (c) $N_S=-10N_P$ (d) $V_S=10V_P$

(ix) Michael Faraday belonged to:
(a) British (b) U.S.A (c) K.S.A (d) Russia

(x) The SI unit of electric potential is:
(a) Watt (b) Joule (c) Coulomb (d) Volt

(xi) Laws of electromagnetic induction and electrolysis were presented by:
(a) Simon Ohm (b) Jeorge Coulomb (c) Newton (d) Michael Faraday

(xii) The S.I unit of coulomb constant is:
(a) $Nm^{2}c^{\ 2}$ (b) $Nm^{2}c^{2}$ (c) $Nm^{\ 2}c^{\ 2}$ (d) $Nm^{\ 2}c^{2}$

✂--

2- Write short answers of the following questions. (18)

(i) Define the terms resolving and magnifying power.
(ii) What is meant by Endoscope?
(iii) By using total internal reflection, how light propagates through optical fibers?
(iv) Find the vaue of critical angle for water if the refracted angle is 90^o, whereas the refractive index of water is 1.33 and that of air is 1.00.
(v) Under what conditions will a converging lens form a virtual image?
(vi) Define electric field lines and electric potential.
(vii) Write down a brief note on application of electrostatics in spray painting.
(viii) Write down the names of combination of capacitors.
(ix) What are the harzards of static electricity?

Test # 22	Chapter # 12, 13	Geometrical Optics To Electrostatics	Time: 30 Min

	A	B	C	D
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				

1- Fill the box of correct answer in this manner that the ink is not come out from the box. **(12)**

(i) The principal focus of a concave mirror is:
(a) Virtual (b) Real (c) Both A and B (d) None of these

(ii) The Critical Angle of water is:
(a) 48.8° (b) 488° (c) 90° (d) 95°

(iii) Conditions for total Internal Reflection are:
(a) 2 (b) 3 (c) 4 (d) 5

(iv) The critical angle of glass is:
(a) 42° (b) 45° (c) 90° (d) 0°

(v) The endoscope which is used to examine throat is called:
(a) Gastroscope (b) Cystoscope (c) Bronchoscope (d) None of these

(vi) Which of the following quantities is not changed during refraction of light?
(a) its direction (b) its speed (c) its frequency (d) its wavelength

(vii) The transformer works on.
(a) Principle of Mutual Induction (b) Principle of D.C Motor
(c) Principle of A.C. generator (d) Principle of Self Induction

(viii) Unit of charge is.
(a) Volt (b) Coulomb (c) Ampere (d) Ohm

(ix) The formula of electric potential is.
(a) $v = \frac{w}{q}$ (b) $v = \frac{q}{w}$ (c) $v = qw$ (d) $v = 2qw$

(x) Coulomb's Law is:
(a) $F = G\frac{m_1 m_2}{r}$ (b) F = qE (c) $F = K\frac{q_1 q_2}{r^2}$ (d) $F = K\frac{q_1 q_2}{r^3}$

(xi) If the medium between two charges is air then the value of k will be:
(a) $9\times10^{8}\,Nm^2C^{-2}$ (b) $9\times10^{9}\,Nm^2C^{-2}$ (c) $9\times10^{-8}\,Nm^2C^{-2}$ (d) $9\times10^{-9}\,Nm^2C^{-2}$

(xii) One watt is equal to:
(a) Js (b) Js^{1} (c) J^2s (d) sJ^{1}

2- Write short answers of the following questions. **(18)**

(i) What is the purpose of light pipe?
(ii) What is concave lense? Draw its figure.
(iii) How short sightedness can be corrected?
(iv) An object is 14cm in front of a convex mirror. The image is 5.8cm behind the mirror. What is the focal length of the mirror.
(v) What is telescope?
(vi) What is numercial value of "K" in Coulomb's Law.
(vii) Define volt.
(viii) Define electrostatic induction.
(ix) Give the two examples of fixed capacitors.

Test # 23	Chapter # 14, 15	Current Electricity To Electromagnetism	Time: 30 Min

	A	B	C	D		A	B	C	D		A	B	C	D
1.	○	○	○	○	5.	○	○	○	○	9.	○	○	○	○
2.	○	○	○	○	6.	○	○	○	○	10.	○	○	○	○
3.	○	○	○	○	7.	○	○	○	○	11.	○	○	○	○
4.	○	○	○	○	8.	○	○	○	○	12.	○	○	○	○

1- Fill the box of correct answer in this manner that the ink is not come out from the box. (12)

(i) What is the voltage across a 6Ω resistor when 3 A of current passes through it?
(a) 2 V (b) 9 V (c) 18 V (d) 36 V

(ii) What happens to the intensity or the brightness of the lamps connected in series as more and more lamps are added?
(a) increases (b) decreases (c) remains the same (d) cannot be predicted

(iii) Why should household appliances be connected in parallel with the voltage source?
(a) to increases the resistance of the circuit (b) to decrease the resistance of the circuit
(c) to provide each appliance the same voltage as the power source
(d) to provide each appliance the same current as the power source

(iv) Electric potential and e.m.f.
(a) are the same terms (b) are the different terms
(c) have different units (d) both (b) and (c)

(v) When we double the voltage in a simple electric circuit, we double the:
(a) current (b) power (c) resistance (d) both (a) and (b)

(vi) If we double both the current and the voltage in a circuit while keeping its resistance constant the power:
(a) remains uncharged (b) halves (c) doubles (d) quater

(vii) Which part of a D.C. motor reverses the direction of current through the coil every half-cycle?
(a) the armature (b) the commutator (c) the brushes (d) the slip rings

(viii) The direction of induced e.m.f in a circuit is in accordance with conservation of:
(a) mass (b) charge (c) momentum (d) energy

(ix) The step-up transformer:
(a) increases the input current (b) increases the input voltage
(c) has more turns in the primary (d) has less turns in the secondary coil

(x) The turn ratios of a transformer is 10. it means
(a) $I_s = 10I_p$ (b) $N_s = \frac{N_p}{10}$ (c) $N_s = 10N_p$ (d) $V_s = \frac{V_p}{10}$

(xi) Transformer is used to change the value of:
(a) Charge (b) Energy (c) Power (d) Voltage

(xii) Which thing works on the principle of electromagnetic induction in hydro electric power house:
(a) Motor (b) Generator (c) Galvanic cell (d) Voltaic cell

✂--

2- Write short answers of the following questions. (18)

(i) How E.M.F. of a battery measure?
(ii) Define current. What is its SI unit?
(iii) What is difference between electric power and kilowatt hour?
(iv) Write down two advantages of parallel circuit over series circuit.
(v) How can we identify conductors and insulators with the help of electroscope?
(vi) Write a brief note on magnetic field of solenoid.
(vii) Which is the principle to finding the direction of magnetic field? State it.
(viii) What is meant by intensity of magnetic field?
(ix) Describe the construction of transformer.

Test # 24	Chapter # 14, 15	Current Electricity To Electromagnetism	Time: 30 Min

	A	B	C	D		A	B	C	D		A	B	C	D
1.	○	○	○	○	5.	○	○	○	○	9.	○	○	○	○
2.	○	○	○	○	6.	○	○	○	○	10.	○	○	○	○
3.	○	○	○	○	7.	○	○	○	○	11.	○	○	○	○
4.	○	○	○	○	8.	○	○	○	○	12.	○	○	○	○

1- Fill the box of correct answer in this manner that the ink is not come out from the box. (12)

(i) What is the power rating of a lamp connected to a 12V source when it carries 2.5 A?
(a) 4.8 W (b) 14.5 W (c) 30 W (d) 60 W

(ii) The combined resistance of two identical resistors, connected in series is 8Ω. Their combined resistance in a parallel arrangement will be:
(a) 2Ω (b) 4Ω (c) 8Ω (d) 12Ω

(iii) Electrical energy is given by:
(a) QR (b) QV (c) QC (d) Qt

(iv) 1kwh is equal to:
(a) 3.6MJ (b) 3.6KJ (c) $3.6J^{-1}$ (d) 3.6J

(v) The electric power of washing machine in watt is:
(a) 50 (b) 750 (c) 100 (d) 800

(vi) Unit of resistance is:
(a) Ampere (b) Volt (c) Ohm (d) Farad

(vii) On which principle induced e.m.f. is produced in the secondary coil?
(a) Mutual Induction (b) Self induction (c) Electric induction (d) Induced current

(viii) Turn ratio in a transformer is 1:100. It means that:
(a) $Vs=\frac{Vp}{10}$ (b) $N_S=10N_P$ (c) $N_S=\frac{N_P}{10}$ (d) $I_S=10I_P$

(ix) In D.C. Motor, coil can rotate in magnetic field by an angle of:
(a) $90''$ (b) $60''$ (c) $45''$ (d) $30''$

(x) A device which is used to increase or decrease the voltage:
(a) Transformer (b) Motor (c) Generator (d) Voltmeter

(xi) The study of magnetic effects of current is called:
(a) Magnetism (b) Electro Magnetism (c) Electric capcity (d) Electricity

(xii) Which device is based on the principle of electromagnetism?
(a) Electric motor (b) T.V (c) CDS (d) Mobile phone

✂--

2- Write short answers of the following questions. (18)

(i) What is meant by E.M.F? Write its unit.
(ii) Define ampere.
(iii) How the current can be measured by Ammeter?
(iv) What is the difference between Earth wire and Live wire?
(v) What is the difference between Cell and Bettery?
(vi) How electrons are deflected by magnetic field? Explain.
(vii) What are the factors affecting the induced e.m.f.
(viii) Explain convential current.
(ix) Under what condition the magnetic flux wil be minimum and maximum.

Test # 25	Chapter # 16, 18	Basic Electronics To Atomic & Nuclear Physics	Time: 30 Min

	A	B	C	D		A	B	C	D		A	B	C	D
1.	○	○	○	○	5.	○	○	○	○	9.	○	○	○	○
2.	○	○	○	○	6.	○	○	○	○	10.	○	○	○	○
3.	○	○	○	○	7.	○	○	○	○	11.	○	○	○	○
4.	○	○	○	○	8.	○	○	○	○	12.	○	○	○	○

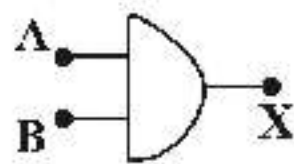
1- Fill the box of correct answer in this manner that the ink is not come out from the box. (12)

(i) If X = A.B, then X is 1 when:
(a) A and B are 1 (b) A or B is 0 (c) A is 0 and B is 1 (d) A is 1 and B is 0

(ii) The output of a NAND gate is 0 when:
(a) both of its inputs are 0 (b)both of its inputs are 1
(c) any of its inputs is 0 (d) any of its inputs is 1

(iii) In C.R.O. the potential of Gird is:
(a) Positive (b) Zero (c) Neutral (d) Negative

(iv) Logic operation performed by the gate:

A B X

(a) AND (b) NOR (c) NAND (d) OR

(v) The first radio signal transmitted throgh air by:
(a) Marconi (b) Newton (c) Coulomb (d) Fleming

(vi) Alexander Graham Bell in 1876 made.
(a) Machine (b) Computer (c) Telephone (d) Cell

(vii) The computer based information system (CBIS) is formed by:
(a) 2 - Parts (b) 3 - Parts (c) 4 - Parts (d) 5 - Parts

(viii)Infromation storage devices working on different principles use.
(a) Electronics (b) Magnetism (c) Laser Technology (d) All of these

(ix) Particles in the nucles of an atom are:
(a) Protons and electrons (b) Protons
(c) Protons and neutrons (d) Electrons and neutrons

(x) Alpha ($'\alpha'$) particles have charge.
(a) Positive (b) Negative (c) Neutral (d) None of these

(xi) Isotopes are atoms of same element with different:
(a) atomic mass (b) atomic number (c) number of protons (d) number of electrons

(xii) One of the isotopes of uranium is ${}^{238}_{92}U$. The number of neutrons in this isotope is:
(a) 92 (b) 146 (c) 238 (d) 330

2- Write short answers of the following questions. (18)

(i) Describe the role of deflecting plates in cathode ray oscilloscope.
(ii) What do you mean by NOT gate? How does it work?
(iii) Define electronics.
(iv) What is meant by floppy and Hard disks?
(v) What is meant by optical fibre?
(vi) Define internet?
(vii) What is meant by background radiation?
(viii)Describe two safety precautions to avoid hazards of radiations.
(ix) How fission chain reaction is controlled?

Test # 26	Chapter # 16, 18	Basic Electronics To Atomic & Nuclear Physics	Time: 30 Min

	A	B	C	D		A	B	C	D		A	B	C	D
1.	○	○	○	○	5.	○	○	○	○	9.	○	○	○	○
2.	○	○	○	○	6.	○	○	○	○	10.	○	○	○	○
3.	○	○	○	○	7.	○	○	○	○	11.	○	○	○	○
4.	○	○	○	○	8.	○	○	○	○	12.	○	○	○	○

1- Fill the box of correct answer in this manner that the ink is not come out from the box. (12)

(i) The output of OR gate will be 0 when:
(a) A=0 , B=0 (b) A=1, B=1 (c) A=0 , B=1 (d) A=1 , B=0

(ii) The process in which electrons are emitted from a hot metal surface is called:
(a) Boiling (b) Evaporation (c) Conduction (d) Thermionic emission

(iii) Number of input terminals in NOT gate is:
(a) 1 (b) 2 (c) 3 (d) 4

(iv) The cathode ray oscilloscope consists of main parts:
(a) Two (b) Three (c) Four (d) Five

(v) In computer terminology information means:
(a) any data (b) raw data (c) processed data (d) large data

(vi) Which is the most suitable means of reliable continuous communication between an orbiting satellite and Earth?
(a) microwaves (b) radiowaves (c) sound waves (d) any light wave

(vii) The basic operations performed by a computer are:
(a) arithmetic operations (b) non-arithmetic operations
(c) logical operations (d) both (a) and (c)

(viii) The brain of any computer system is:
(a) monitor (b) memory (c) CPU (d) control unit

(ix) Which among the following radiations has more penetrating power?
(a) a beta particle (b) a gamma ray
(c) an alpha particle (d) all have the same penetrating ability

(x) What happens to the atomic number of an element which emits one alpha particle and a beta particle?
(a) increases by 1 (b) stays the same (c) decreases by 2 (d) decreases by 1

(xi) The half-life of a certain isotope is 1 day. What is the quantity of the isotope after 2 days?
(a) one half (b) one quarter (c) one eighth (d) none of these

(xii) When Uranium (92 protons) ejects a beta particle, how many protons are left in the remaining nucleus?
(a) 92 protons (b) 91 protons (c) 90 protons (d) 93 protons

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2- Write short answers of the following questions. (18)

(i) How does the LDR work?
(ii) Write two uses of Cathode ray oscilloscope.
(iii) Explain digital signals and analogue signals.
(iv) What are browsers. Give their two examples.
(v) What is difference between hardware and software?
(vi) What is mutual relation between information technology and telecommunication.
(vii) Write two properties of $\alpha - particle$.
(viii) Write two properties of Gamma rays.
(ix) Write a note on Cosmic Radiations.

Test # 27	Chapter # 10, 13	First Half Book Paper No. 1	Time: 1 Hour

	A	B	C	D		A	B	C	D		A	B	C	D
1.	○	○	○	○	5.	○	○	○	○	9.	○	○	○	○
2.	○	○	○	○	6.	○	○	○	○	10.	○	○	○	○
3.	○	○	○	○	7.	○	○	○	○	11.	○	○	○	○
4.	○	○	○	○	8.	○	○	○	○	12.	○	○	○	○

1- Fill the box of correct answer in this manner that the ink is not come out from the box. (12)

(i) The relation between time, speed and distance is:
(a) $V=\frac{t}{d}$ (b) $V-dt$ (c) $V=\frac{d}{t}$ (d) $V=\frac{t^2}{d}$

(ii) In Simple Harmonic Motion, Velocity at extreme position is:
(a) Maximum (b) Minimum
(c) 0 (d) Sometime maximum sometime minimum

(iii) When $l=1.0m$ then the time period of Simple Pendulum is:
(a) 1.99 sec (b) 2.11 sec (c) 1.89 sec (d) 1.88 sec

(iv) The speed of sound in air is:
(a) $1246kmh^{1}$ (b) $1264kmh^{1}$ (c) $1462kmh^{1}$ (d) $21462kmh^{1}$

(v) If speed of a sound is $320ms^{1}$, the distance covered in a time of 1.5s will be:
(a) 331.5m (b) 33.5m (c) 480m (d) 221m

(vi) The speed of sound at 0°C is:
(a) $386ms^{-1}$ (b) $376ms^{-1}$ (c) $231ms^{-1}$ (d) $331ms^{-1}$

(vii) The index of refraction depends on:
(a) the focal lenght (b) the speed of light (c) the image distance (d) the object distance

(viii) Which type of image is formed by a concave lens on a screen?
(a) inverted and real (b) inverted and virtual (c) upright and real (d) upright and virtual

(ix) Which type of image is produced by the converging lens of human eye if it views a distant object?
(a) real, erect, same size (b) real, inverted, diminished
(c) virtual, erect, diminished (d) virtual, inverted, magnified

(x) Each bolt of lightening contains the energy:
(a) 200 Million Joule Energy (b) 3000 Million Joule Energy
(c) 1000 Million Joule Energy (d) 400 Million Joule Energy

(xi) In Mica Capacitor the dielectric is:
(a) Mica (b) Plastic (c) Paper (d) Aluminium

(xii) Combination of capacitors are:
(a) 2 (b) 3 (c) 4 (d) 5

✂---

2- Write short answers of the following questions. (10)

(i) State Hook's law.
(ii) If the length of a simple pendulum is doubled, what will be the change in its time period?
(iii) Describe two effects of noise on human health.
(iv) Why ultra sound is useful in medical field. (v) How we increase the speed of sound?
(vi) Describe the law of refraction of light.
(vii) What is difference between short sightedness and long sightedness?
(viii) What is meant by resolving power of an instrument.
(ix) Write a brief note on electrostatic air cleaners. (x) What is meant by point charge?

SUBJECTIVE PART

☆ **Answers the following questions with detail. (18)**

3- (a) Define simple pendulum. Also prove that its motion is S.H.M. (05)

(b) A marine survey ship sends a sound wave straight to the sea bed. It receives an echo 1.5s later. The speed of sound in sea water is $1500ms^{1}$. Find the depth of sea at that position. (04)

4- (a) A convex lens of a focal length 6cm is to be used to form a virtual image three times the size of the object. Where must the lens be placed? (05)

(b) Define and describe Coulomb's law. (04)

Test # 28	Chapter # 10, 13	First Half Book Paper No. 2	Time: 1 Hour

	A	B	C	D		A	B	C	D		A	B	C	D
1.	○	○	○	○	5.	○	○	○	○	9.	○	○	○	○
2.	○	○	○	○	6.	○	○	○	○	10.	○	○	○	○
3.	○	○	○	○	7.	○	○	○	○	11.	○	○	○	○
4.	○	○	○	○	8.	○	○	○	○	12.	○	○	○	○

1- Fill the box of correct answer in this manner that the ink is not come out from the box. (12)

(i) The spring's constant is:
(a) $K = -\frac{F}{x}$　(b) $F = ma$　(c) $w = mg$　(d) $k = -\frac{x}{m}$

(ii) Which of the following is an example of simple harmonic motion?
(a) Motion of a simple pendulum　(b) The motion of ceiling fan
(c) The spinning of the Earth on its axis　(d) A bouncing ball on a floor

(iii) If the mass of the bob of a pendulum is increased by a factor of 3, the period of the pendulum's motion will.
(a) be increased by a factor of 2　(b) remain the same
(c) be decreased by a factor of 2　(d) be decreased by a factor of 4

(iv) One bell is equal to:
(a) 10dB　(b) 20dB　(c) 30dB　(d) 40dB

(v) The speed of sound in distilled water at 25°C is:
(a) 7478　(b) 7488　(c) 1498　(d) 1508

(vi) In which state of matter longitudinal waves move faster?
(a) Liquid　(b) Solid　(c) Gas　(d) Liquid and Solid both

(vii) The index of refraction depends on:
(a) the focal lenght　(b) the speed of light　(c) the image distance　(d) the object distance

(viii) Which type of image is formed by a concave lens on a screen?
(a) inverted and real　(b) inverted and virtual　(c) upright and real　(d) upright and virtual

(ix) Which type of image is produced by the converging lens of human eye if it views a distant object?
(a) real, erect, same size　(b) real, inverted, diminished
(c) virtual, erect, diminished　(d) virtual, inverted, magnified

(x) In series combination of capacitors, each capacitor will have same:
(a) Voltage　(b) Charge　(c) Capacitance　(d) Charge and voltage

(xi) One nano farad is equal to:
(a) $1\times10^{-6}F$　(b) $1\times10^{-9}F$　(c) $1\times10^{-12}F$　(d) $1\times10^{-18}F$

(xii) 1 milli Ampere is:
(a) $10^{3}A$　(b) $10^{5}A$　(c) $10^{6}A$　(d) $10^{9}A$

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2- Write short answers of the following questions. (10)

(i) Define diffraction of waves.
(ii) Define simple harmonic motion and write its equation.
(iii) What is speed of sound through brass and iron at 25°C?
(iv) What do you mean by reverberation?
(v) Differentiate between frequency and pitch.
(vi) Define reflection of light.
(vii) What is a lens?
(viii) Name four different types of capacitors.
(ix) What is the function of electroscope?
(x) What is lightning?

SUBJECTIVE PART

☆ Answers the following questions with detail. (18)

3- (a) Prove that the motion of a body of mass 'm' attached to a spring is simple harmonic motion. (05)
(b) Define ultrasound. Write its uses. (04)

4- (a) What is critical angle? Derive a relationship between the cirtitcal angle and the refractive index of a substance. (05)
(b) Two bodies are oppositely charged with $500\mu c$ and $100\mu c$. Find the forces between the two charges if the distance between them in air is 0.5m. (04)

Test # 29	Chapter # 14, 18	Second Half Book Paper No. 1	Time: 1 Hour

	A	B	C	D		A	B	C	D		A	B	C	D
1.	○	○	○	○	5.	○	○	○	○	9.	○	○	○	○
2.	○	○	○	○	6.	○	○	○	○	10.	○	○	○	○
3.	○	○	○	○	7.	○	○	○	○	11.	○	○	○	○
4.	○	○	○	○	8.	○	○	○	○	12.	○	○	○	○

1- Fill the box of correct answer in this manner that the ink is not come out from the box. **(12)**

(i) The unit of current is:
(a) Volt (b) Ampere (c) Joule (d) Coulomb

(ii) The formula to find the magnitude of current is.
(a) $I = \frac{Q}{t}$ (b) $I = QV$ (c) $I = CV$ (d) $I = \frac{C}{Q}$

(iii) The turn ratios of a transformer is 10. it means:
(a) $I_s = 10I_p$ (b) $N_s = \frac{N_p}{10}$ (c) $N_s = 10N_p$ (d) $V_s = \frac{V_p}{10}$

(iv) Transformer is used to change the value of:
(a) Charge (b) Energy (c) Power (d) Voltage

(v) Which thing works on the principle of electromagnetic induction in hydro electric power house:
(a) Motor (b) Generator (c) Galvanic cell (d) Voltaic cell

(vi) The process in which electrons are emitted from a hot metal surface is called:
(a) Boiling (b) Evaporation (c) Conduction (d) Thermionic emission

(vii) Number of input terminals in NOT gate is:
(a) 1 (b) 2 (c) 3 (d) 4

(viii) The cathode ray oscilloscope consists of main parts:
(a) Two (b) Three (c) Four (d) Five

(ix) Microwaves are used in:
(a) Radio (b) T.V. (c) Mobile phone (d) All these

(x) One byte is equal to:
(a) 7 bits (b) 5 bits (c) 8 bits (d) 9 bits

(xi) In $^{235}_{92}U$, 92 is the number of:
(a) Protons (b) Neutrons
(c) Protons and neutrons (d) Neutrons and electrons

(xii) The half life of Plautonium $^{236}_{94}Pu$ in years is:
(a) 0.85 (b) 1.85 (c) 2.85 (d) 3.85

2- Write short answers of the following questions. **(10)**

(i) Define electric potential.
(ii) Define fuse.
(iii) What is meant by intensity of magnetic field?
(iv) Describe the construction of transformer.
(v) Define logic gates.
(vi) What is NOR gate? Draw its symbol.
(vii) What is the language of computer?
(viii) State two characteristics of β-rays.
(ix) What is neutron number?
(x) Define atom.

SUBJECTIVE PART

☆ **Answers the following questions with detail.** **(18)**

3- (a) By applying a potential difference of 10V across a conductor a current of 1.5A passes through it. How much energy would be obtained from the current in 2 minutes. (05)

(b) Write a note on DC motor. (04)

4- (a) Write symbols of AND operation and OR operation. Also write their truth table. (05)

(b) Explain briefly the transmission of radiowaves through space. (04)

Test # 30	Chapter # 14, 18	Second Half Book Paper No. 2	Time: 1 Hour

	A	B	C	D		A	B	C	D		A	B	C	D
1.	○	○	○	○	5.	○	○	○	○	9.	○	○	○	○
2.	○	○	○	○	6.	○	○	○	○	10.	○	○	○	○
3.	○	○	○	○	7.	○	○	○	○	11.	○	○	○	○
4.	○	○	○	○	8.	○	○	○	○	12.	○	○	○	○

1- Fill the box of correct answer in this manner that the ink is not come out from the box. **(12)**

(i) In D.C. Motor, coil can rotate in magnetic field by an angle of:
(a) 90^o (b) 60^o (c) 45^o (d) 30^o

(ii) A device which is used to increase or decrease the voltage:
(a) Transformer (b) Motor (c) Generator (d) Voltmeter

(iii) The study of magnetic effects of current is called:
(a) Magnetism (b) Electro Magnetism (c) Electric capcity (d) Electricity

(iv) In Tungsten Filament, the Potential given to produce the beam of electron by Thermionic Emission is:
(a) 6 V (b) 7 V (c) 8 V (d) 9 V

(v) It blocks DC current but allows AC current to pass through the circuit:
(a) Capacitor (b) Resistance (c) Specific resistance (d) Thermometer

(vi) The process by which electrons are emitted by a hot metal surface is known as:
(a) boiling (b) evaporation (c) conduction (d) thermionic emission

(vii) The particles emitted from a hot cathode surface are:
(a) positive ions (b) negative ions (c) protons (d) electrons

(viii) The output of a two input NOR gate is 1 when:
(a) A is 1 and B is 0 (b) A is 0 and B is 1
(c) both A and B are 0 (d) both A and B are 1

(ix) The first radio signal transmitted throgh air by:
(a) Marconi (b) Newton (c) Coulomb (d) Fleming

(x) Alexander Graham Bell in 1876 made.
(a) Machine (b) Computer (c) Telephone (d) Cell

(xi) The Proton is heavier then an electron:
(a) 1836 (b) 1863 (c) 1870 (d) 1800

(xii) The rays used during brain radiotherapy are:
(a) Alpha rays (b) Beta rays (c) Gamma rays (d) X rays

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2- Write short answers of the following questions. **(10)**

(i) Define conventional current.
(ii) What are the limitations on Ohm's law?
(iii) Describe the construction of transformer.
(iv) How electrons are deflected by magnetic field? Explain.
(v) What is flash drive?
(vi) Write the four names of information storage devices.
(vii) Make the truth table of OR gate.
(viii) What is meant by Logic States?
(ix) Write two properties of Gamma rays.
(x) Write a note on Cosmic Radiations.

SUBJECTIVE PART

☆ **Answers the following questions with detail.** **(18)**

3- (a) State Joule's law and derive its formula. (05)

(b) If a transformer is used to supply voltage to a 12 volt model train which draws a current 0.8A. Calculate the current in the primary coil. If the voltage of the A.C. sources is 240V. (04)

4- (a) What is the use of cathode ray oscilloscope? What is the function of electron gun in it? (05)

(b) Cobalt-60 is a radioactive element with half life of 5.25 years. What fraction of the original sample will be left after 26 years. (04)

Test # 31	Chapter # 10, 18	Full Book Paper No. 1	Time: 2 Hour

1. **Fill the box of correct answer in this manner that the ink is not come out from the box.**

Q.1	Questions	(A)	(B)	(C)	(D)
(i)	One of the isotope of Uranium is $^{238}_{92}U$ the number of Neutrons in this isotope is:	92	146	238	330
(ii)	One byte is equal to:	4 bits	6 bits	8 bits	10 bits
(iii)	AND gate can be formed by using two:	AND gates	NAND gates	NOT gates	NOR gates
(iv)	The particles emitted from a hot metal surface are:	Positive ions	Negative ions	Electrons	Protons
(v)	The presence of magnetic field can be detected by a:	Magnetic compass	Small mass	Stationary positive charge	Stationary negative charge
(vi)	If we double both voltage and current in a circuit while keeping its resistance constant, the power is:	Quadruples	Remains unchanged	Double	Half
(vii)	The S.I unit of electric power is:	Joule	Watt	Newton	Kwh
(viii)	Two small charged spheres are separated by 2mm. Which of the following would produce the greater attractive force.	+1q and +4q	-1q and -4q	+2q and +2q	+2q and -2q
(ix)	Which one of the following quantity is not changed during refraction of light?	Its direction	Its speed	Its wavelength	Its frequency
(x)	Index of refraction of water is:	1.31	1.00	1.33	1.52
(xi)	How does sound travel from its source to your ear by vibration in wires:	By change in air pressure	By vibration in wires	By electromagnetic waves	Infra red waves
(xii)	The relation between v, f and λ of a wave is:	$vf = \lambda$	$v = f\lambda$	$v\lambda = f$	$v = \frac{\lambda}{f}$

Marks : 48 ☆ **Subjective (Part-I)** ☆ **Time: 01:45**

2. **Write short Answers of any five part.** **(5 × 2 = 10)**
(i) Define diffraction of waves and write an example. (ii) If $f = 4Hz$ and $\lambda = 0.4m$, find the value of v.
(iii) Define mechanical waves and electromagnetic waves.
(iv) What is the pitch and quality of sound? (v) What is the reflection of sound?
(vi) Define electromagnetic induction. (vii) Define mutual induction.
(viii) What is relay? Write its use.

3. **Write short Answers of any five part.** **(5 × 2 = 10)**
(i) Write any two uses of lens. (ii) What is the difference between incident ray and reflected ray?
(iii) What is meant by Real focus? (iv) BSs and MSc stand for what?
(v) What are browsers? Give their two examples. (vi) Define C.P.U. Why it is called the brain of computer?
(vii) Describe medical treatment of radio isotopes. (viii) Write a note on cosmic readiations.

4. **Write short Answers of any five part.** **(5 × 2 = 10)**
(i) Define Farad. (ii) What is meant by volt? (iii) State Coulomb's Law. (iv) Define ampere.
(v) What is meant by conventional current? (vi) State Ohm's Law. (vii) Define thermionic emission.
(viii) What is meant by analogue to digital converter (ADC)?

☆ SUBJECTIVE (Part-II) ☆

Attempet any two Questions. Each question has 9 marks. **9 × 2 = 18**

5. **(a)** If in Anarkali Bazar Lahore, intensity level of sound is 80 dB, what will be the intensity of sound there?
(b) State the conditions for total internal reflection.

6. **(a)** The force of repulsion between two identical positive charges is 0.8 N. When the charges are 0.1 m apart. Find the value of each charge.
(b) Determine the equivalent resistance of series combination of resistors.

7. **(a)** Ashes from a campfire deep in a cave shows carbon - 14 activity of only one-eighth the activity of fresh wood. How long ago was that campfire made?
(b) What is cathode ray oscilloscope? Describe its components.

Test # 32	Chapter # 10, 18	Full Book Paper No. 2	Time: 2 Hour

	A	B	C	D		A	B	C	D		A	B	C	D
1.	○	○	○	○	5.	○	○	○	○	9.	○	○	○	○
2.	○	○	○	○	6.	○	○	○	○	10.	○	○	○	○
3.	○	○	○	○	7.	○	○	○	○	11.	○	○	○	○
4.	○	○	○	○	8.	○	○	○	○	12.	○	○	○	○

1. **Fill the box of correct answer in this manner that the ink is not come out from the box.**

Q.1	Questions	(A)	(B)	(C)	(D)
(i)	The output of a NAND gate is 0 when:	A=0 and B=0	A=1 and B=1	A=0 OR B=0	A=1 OR B=1
(ii)	Which of the following is not a storage device?	Hard disk	Flash drive	Keyboard	Cassattes
(iii)	Which of the following action is not processing?	Arranging	Gathering	Manipulating	Calculating
(iv)	Which of the following radiations has more penetrating power?	Beta particle	Gamma rays	Alpha particle	All these
(v)	Which of the following characteristics of a wave is independent of the others?	Speed	Frequency	Amplitude	Wavelength
(vi)	For a normal person, audible frequency range for a sound wave lines between:	10Hz-10KHz	20Hz-20KHz	25Hz-25KHz	30Hz30KHz
(vii)	Power of a lens is the reciprocal of:	Speed	Focal length	Frequency	Wavelength
(viii)	Image formed by a camera is:	Real, eract, same size	Real, inverted, diminshed	Virtual, erect, diminshed	Virtual, inverted, magnified
(ix)	Electric field lines:	Always cross each other	Never cross each other	Cross each other in the region of strong field	Cross each other in the region of weak field
(x)	Electric power (P) is equal to:	I^2V	IV^2	I^2R	IR^2
(xi)	If we double both the current and the voltage in a circuit while keeping its resistance constant, the power:	Remains unchanged	Halves	Doubles	Quadruples
(xii)	Which part of a D.C motor reverses the direction of current through the coil every half-cycle?	The armature	Commutator	The brushes	Slip rings

Marks : 48 ☆ **Subjective (Part-I)** ☆ **Time: 01:45**

2. **Write short Answers of any five part.** **(5 × 2 = 10)**

(i) If the length of a simple pendulum is doubled what will be the change in its time period?
(ii) Define restoring force.
(iii) What is the difference between musical sound and noise?
(iv) What is meant by ultrasound?
(v) What is meant by reflection of sound?
(vi) Define current and also write its unit.
(vii) Prove that: 1KWH = 3.6MJ
(viii) State Joule's law.

3. **Write short Answers of any five part.** **(5 × 2 = 10)**

(i) Differentiate between concave and convex mirror.
(ii) What is mirror formula? Write its mathematical form.
(iii) What is meant by resolving power?
(iv) Define electrostatic induction.
(v) Define electric field intensity and write its formula.
(vi) Define information technology and telecommunication.
(vii) Write a short note on fax machine.
(viii) What is difference between RAM and ROM memories?

4. **Write short Answers of any five part.** **(5 × 2 = 10)**

(i) Define mutual induction.
(ii) State right hand rule.
(iii) Define thermionic emission.
(iv) Define analogue and digital electronics.
(v) Write two uses of cathode ray oscilloscope.
(vi) Define fission reaction.
(vii) What is meant by background radiations?
(viii) Write two properties of α – particles.

☆ SUBJECTIVE (Part-II) ☆

Attempet any two Questions. Each question has 9 marks. **9 × 2 = 18**

5. **(a)** Prove that a motion of mass attached to a spring performing simple harmonic motion.
   (b) A convex lens of focal length 6cm is used to form a virtual image three times of size of object. Where must lens be place?
6. **(a)** Write down the characteristics of parallel combination of resistors.
   (b) If 0.5C charge passes through a wire in 10s, then what will be the value of current flowing through the wire?
7. **(a)** What is meant by half life of radioactive element and how is it measured? Expalin.
   (b) Discuss the role of information technology in school education.

معزز اساتذہ کرام، السلام علیکم ورحمۃ اللہ! گزارش ہے کہ سٹوڈنٹس کو مطالعہ سے پہلے درج ذیل دعاؤں کو باقاعدگی سے پڑھنے کی ترغیب دیں۔ جزاک اللہ۔

عزیز طلباو طالبات، آپ سب بھی دعاؤں کا اہتمام ضرور کریں۔ اللہ تعالیٰ آپ سب کے اور اساتذہ کرام کے علم، زندگی اور ایمان میں برکت دے۔ آمین۔

ہمارے لیے بھی دعا کرتے رہیں۔ اللہ تعالیٰ ہم سب کے لیے دنیاو آخرت میں آسانیاں اور سکون نصیب فرمائے۔

بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِيْمِ ؕ

اللہ کے نام سے شروع جو رحمٰن ورحیم ہے۔

اَللّٰهُمَّ صَلِّ عَلٰى مُحَمَّدٍ وَّعَلٰٓى اٰلِ مُحَمَّدٍ كَمَا صَلَّيْتَ عَلٰٓى اِبْرٰهِيْمَ وَعَلٰٓى اٰلِ اِبْرٰهِيْمَ اِنَّكَ حَمِيْدٌ مَّجِيْدٌ ۝ اَللّٰهُمَّ بَارِكْ عَلٰى مُحَمَّدٍ وَّعَلٰٓى اٰلِ مُحَمَّدٍ كَمَا بَارَكْتَ عَلٰٓى اِبْرٰهِيْمَ وَعَلٰٓى اٰلِ اِبْرٰهِيْمَ اِنَّكَ حَمِيْدٌ مَّجِيْدٌ ۝

رَبِّ اشْرَحْ لِيْ صَدْرِيْ ۝ وَيَسِّرْ لِيْٓ اَمْرِيْ ۝ وَاحْلُلْ عُقْدَةً مِّنْ لِّسَانِيْ ۝ يَفْقَهُوْا قَوْلِيْ ۝

رَبِّ زِدْنِيْ عِلْمًا۔ رَبِّ زِدْنِيْ عِلْمًا۔ رَبِّ زِدْنِيْ عِلْمًا۔

اَللّٰهُمَّ اِنِّيْٓ اَسْئَلُكَ عِلْمًا نَّافِعًا وَّرِزْقًا طَيِّبًا وَّعَمَلًا مُّتَقَبَّلًا ۝

آخر میں درود شریف دوبارہ پڑھیں۔

اللہ تعالیٰ آپ کو جزا دے، آپ کے علم کے حصول میں آسانیاں عطا فرمائے۔